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10/549,274	09/13/2005	Daisuke Maehara	Q90235	2469

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1791

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10/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,274	Applicant(s) MAEHARA ET AL.	
	Examiner Justin R. Fischer	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9 and 11-24 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (US 4,365,659) and further in view of Sakamoto (US 6,321,806) and Mechanics of Pneumatic Tires. Yoshida discloses a runflat tire construction having a pair of crescent-shaped reinforcing rubbers 5 and a pair of ring-shaped projections 4 or rim guard portions. In this instance, Yoshida suggests that the rim guard portions are disposed to have a high rigidity (Column 4, Lines 40-60). While the reference fails to expressly describe the modulus of the rim guard portion in relation to the sidewall, one of ordinary skill in the art at the time of the invention would have found the claimed relationship obvious in view of Sakamoto (Column 3, Lines 5-10) and Mechanics of Pneumatic Tires (Pages 881-884). In this instance, Mechanics of Pneumatic Tires teaches that sidewall rubber compositions in passenger car tires generally have a Young's modulus of 2.3 MPa. Thus, given the teachings of Sakamoto, one of ordinary skill in the art at the time of the invention would have formed the rim guard portion of Sakamoto with a Young's modulus greater than 2.3 MPa, which fully encompasses the broad range of the claimed invention (greater than 3.0 MPa).

In particular, the general teachings of Sakamoto suggest the use of a harder rubber for the rim guard portion, as compared to the sidewalls, in order to efficiently prevent the bead from unseating during an underinflated running condition. This teaching fully encompasses the claimed range of two to five times larger (modulus or rim guard as compared to sidewall) and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed range (absolute value of modulus or quantitative relationship with sidewall).

With respect to claim 21, the interface between the rim guard portions and the exterior surface of the tire is seen to be smooth.

As to claim 23, the disclosed materials represent the well known and conventional materials used to form a wide variety of tire components, including the carcass.

3. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida, Sakamoto, and Mechanics of Pneumatic Tires as applied in claim 1 above and further in view of Minami (US 6,079,463). As detailed above, Yoshida in view of Sakamoto and Mechanics of Pneumatic Tires substantially teach the claimed runflat tire construction. However, the references are silent with respect to the inclusion of a pair of narrow reinforcing belts. Minami, on the other hand, is broadly directed to a wide variety of tire constructions and suggests including such a narrow reinforcing belt in order to prevent belt edge separation while maintaining tire weight (Column 1, Lines 5-65 and Column 3, Lines 48+). Absent any conclusive showing of unexpected results,

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one of ordinary skill in the art at the time of the invention would have found it obvious to include a narrow reinforcing belt in the tire of Yoshida. It is emphasized that such belts are extensively used in a wide variety of tire constructions for the reasons detailed above.

With respect to claims 12 and 13, Minami discloses the claimed dimensions (Figures 2-4 and Column 4).

4. Claims 2, 9, 11, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida and further in view of Gardner (US 3,951,192). Yoshida discloses a runflat tire construction having a pair of crescent-shaped reinforcing rubbers 5 and a pair of ring-shaped projections 4 or rim guard portions. In this instance, Yoshida suggests that the rim guard portions are disposed to have a high rigidity (Column 4, Lines 40-60). While the reference fails to expressly suggest the inclusion of a composite reinforcing layer, one of ordinary skill in the art at the time of the invention would have found such a modification obvious in view of Gardner (Column 3, Lines 35-45 and Column 5, Lines 25-40). In particular, Gardner suggests the use of a composite reinforcing layer or chafer strip 27 in a rim guard portion (rim protecting bar) to protect the rim guard portion from excess chafing. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include a composite reinforcing layer in the rim guard portion of Yoshida.

As to claims 2, 9, and 11, Gardner suggests the inclusion of reinforcement, such as nylon monofilaments (Column 3, Lines 29-37). The reference further teaches that

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the rim guard portion can be alternatively stiffened by adding fabric reinforced plies (Column 3, Lines 40-50). It is additionally noted that Gardner suggests that "other chafer type constructions are known in the art and can be substituted without departing from this invention". A fair reading of Gardner suggests the general inclusion of a reinforcement layer in the rim guard portion in order to stiffen said portion and resist any abrading or chafing that might occur. One of ordinary skill in the art at the time of the invention would have found it obvious to form such a reinforcement layer with any of the known and conventionally used reinforcing elements, such as cords, cables, monofilaments, short fibers, etc. It is emphasized that Gardner suggests that the particular type of reinforcement is not critical and that "other constructions known in the art can be substituted without departing from the invention". Lastly, the claimed ranges in regards to diameter and length are consistent with those commonly associated with fiber materials used in the tire industry and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed dimensions.

Regarding claim 24, as noted above, Gardner specifically suggests the inclusion of additional reinforcement, such as fabric reinforcing plies, to further stiffen the rim guard portion. One of ordinary skill in the art at the time of the invention would have recognized such language as being directed to woven and nonwoven fabric reinforcing plies. As detailed above, the particular arrangement of the reinforcement material is not critical to the invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the fabric reinforcement plies as nonwoven fabric plies.

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida and further in view of Sakamoto, Mechanics of Pneumatic Tires, and Gardner. Yoshida discloses a runflat tire construction having a pair of crescent-shaped reinforcing rubbers 5 and a pair of ring-shaped projections 4 or rim guard portions. In this instance, Yoshida suggests that the rim guard portions are disposed to have a high rigidity (Column 4, Lines 40-60). While the reference fails to expressly describe the modulus of the rim guard portion in relation to the sidewall, one of ordinary skill in the art at the time of the invention would have found the claimed relationship obvious in view of Sakamoto (Column 3, Lines 5-10) and Mechanics of Pneumatic Tires (Pages 881-884). In particular, the general teachings of Sakamoto suggest the use of a harder rubber for the rim guard portion, as compared to the sidewalls, in order to efficiently prevent the bead from unseating during an underinflated running condition. This teaching fully encompasses the claimed range of two to five times larger (modulus or rim guard as compared to sidewall) and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed range (absolute value of modulus or quantitative relationship with sidewall).

As to the inclusion of a composite reinforcing layer, one of ordinary skill in the art at the time of the invention would have found such a modification obvious in view of Gardner (Column 5, Lines 25-40). In particular, Gardner suggests the use of a composite reinforcing layer or chafer strip 27 in a rim guard portion (rim protecting bar) to protect the rim guard portion from excess chafing. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would

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have found it obvious to include a composite reinforcing layer in the rim guard portion of Yoshida.

6. Claims 1 and 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishigata (US 5,769,983) and further in view of Sakamoto and Mechanics of Pneumatic Tires. Nishigata teaches a runflat tire construction having a pair of rubber reinforcing layers 5. While the reference fails to include a rim guard portion, it is extremely well known to include such portions in tires in order to prevent the tire from unseating during an underinflated running condition, as shown for example by Sakamoto (Column 1, Lines 5-10 and Column 3, Lines 1-10). In this instance, Sakamoto suggests that the rim guard portion 9 has a modulus or rigidity that is greater than that of the sidewall. Mechanics of Pneumatic Tires is additionally provided to recognize the common modulus values for sidewall rubber compositions- absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the rim guard portion with a modulus greater than 3.0 MPa.

As to claims 14-20, the claims contain a plurality of broad ranges that define a wide variety of arrangements for the rim guard portion. The general teachings of Sakamoto appear to suggest a wide range of arrangements that satisfy the claimed invention. In particular, the rim guard portion appears to have a maximum height (thickness) on the order of the tire maximum thickness and the tire appears to have a generally constant thickness over the cross-sectional area of the rim guard portion.

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Furthermore, the top plane of the rim guard portion is flat and appears to have a dimension that is slightly narrower than the bottom plane of the rim guard portion.

Regarding claim 20, Sakamoto suggests that the top plane can be curved or inclined, such that the rim guard portion can be viewed as having a "generally triangular sectional shape" (Column 3, Lines 30-35).

With respect to claim 21, the interface depicted by Sakamoto is seen to represent a smooth curve.

As to claim 23, the disclosed materials represent the well known and conventional materials used to form a wide variety of tire components, including the carcass.

Allowable Subject Matter

7. Claims 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed August 23, 2007 have been fully considered but they are not persuasive.

Applicant argues that Sakamoto only teaches a rim guard portion that is made of a harder rubber as compared to the sidewall rubber and there is no direct relationship between hardness and 100% modulus. While Sakamoto fails to expressly relate the hardness and the 100% modulus, it is well recognized that hardness and 100% modulus do have a positive relationship in tire rubber compositions. In particular,

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rubber compositions having a higher modulus have a greater hardness. Orbach (US 3,288,696) has been provided to expressly recognize such a relationship in tire rubber compositions (Column 1, Lines 25-32). Thus, a fair reading of Sakamoto suggests a rubber composition for the rim guard portion having a greater 100% modulus, as compared to that used to form the sidewall portion.

Applicant further argues that Sakamoto teaches nothing at all regarding a 100% modulus of not less than 3.0 MPa. However, the relevant rejection involves the use of both Sakamoto and Mechanics of Pneumatic Tires. In this instance, Mechanics of Pneumatic Tires teaches that sidewall rubber compositions in passenger car tires generally have a Young's modulus of 2.3 MPa. Thus, given the teachings of Sakamoto, one of ordinary skill in the art at the time of the invention would have formed the rim guard portion of Sakamoto with a Young's modulus greater than 2.3 MPa, which fully encompasses the broad range of the claimed invention (greater than 3.0 MPa). In this instance, applicant has not provided a conclusive showing of unexpected results to establish a criticality for a 100% modulus greater than 3.0 MPa. This position is similarly used to rebut applicant's argument in regards to the degree of difference between the respective tire components. In particular, Sakamoto teaches a rim guard composition having a 100% modulus greater than that of the sidewall composition, which fully encompasses the range of the claimed invention- applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed range between 2 and 5 times the 100% modulus of the sidewall rubber composition.

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Lastly, as to the motivation, the disclosed hardness relationship is seen to contribute to the overall objective of the reference (prevention of bead unseating).

Regarding claims 1 and 14-23, see response above.

With respect to claims 12 and 13, see response above.

As to claims 9 and 11, the rejection with Sugitani has been withdrawn in light of the English translation.

Regarding claims 2 and 9-11 (Gardner), applicant simply states that claim 2 has been amended to incorporate the limitations of claim 10. As set forth in the rejection above, Gardner suggests the inclusion of reinforcement, such as nylon monofilaments (Column 3, Lines 29-37). The reference further teaches that the rim guard portion can be alternatively stiffened by adding fabric reinforced plies (Column 3, Lines 40-50). It is additionally noted that Gardner suggests that "other chafer type constructions are known in the art and can be substituted without departing from this invention". A fair reading of Gardner suggests the general inclusion of a reinforcement layer in the rim guard portion in order to stiffen said portion and resist any abrading or chafing that might occur. One of ordinary skill in the art at the time of the invention would have found it obvious to form such a reinforcement layer with any of the known and conventionally used reinforcing elements, such as cords, cables, monofilaments, short fibers, etc. It is emphasized that Gardner suggests that the particular type of reinforcement is not critical and that "other constructions known in the art can be substituted without departing from the invention". Lastly, the claimed ranges in regards to diameter and length are consistent with those commonly associated with fiber

materials used in the tire industry and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed dimensions.

Applicant further argues that the cited documents that have a reinforcing layer have nothing to do with a tire having a reinforcing rubber which has a generally crescent sectional shape and is arranged at the interior surface side. The examiner agrees. However, the primary reference is Yoshida, which includes a rim guard portion and a runflat insert at the interior surface side. One of ordinary skill in the art at the time of the invention would have been motivated to modify the rim guard portion of Yoshida in view of Gardner in order to stiffen the rim guard portion. In this instance, the teachings of Gardner are in no way limited to a tire construction devoid of a runflat insert- the reference is more broadly directed to a tire construction having a rim guard portion.

Regarding claim 3, as detailed above, Sakamoto and Mechanics of Pneumatic Tires render the quantitative relationship of the claimed invention obvious.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Justin R Fischer
Primary Examiner
Art Unit 1791

JRF

October 18, 2007